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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,076

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Hugues Meunier

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EXAMINER

TRAN, DALENA

ART UNIT

PAPER NUMBER

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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/538,076	Applicant(s) MEUNIER, HUGUES	
	Examiner Dalena Tran	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 9-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/9/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicant(s)

1. This application has been examined. Claims 1-22 are pending.

The prior art submitted on 6/9/05 has been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, and 19-20, are rejected under 35 U.S.C.103(a) as being unpatentable over Le Tallee et al. (6438492) in view of Tran (5892462), and Kelly et al. (6567728).

As per claim 1, Le Tallee et al. disclose terrain anticollision equipment to be carried onboard an aircraft, comprising: means for determining a virtual envelope of protection of maneuver constructed around the short term predicted trajectory of the aircraft and delimiting a protection volume around the current position and the current trajectory of the aircraft; means for detecting intrusions, into said virtual envelope or envelopes of protection of maneuver, of a representation of an envelope of the terrain and/or of the ground; obstacles overflown stored in a data base onboard or on the ground; and alarm means triggered by the intrusion detection means (see the abstract; columns 2-3, lines 40-26; column 7, lines 15-63; and column 8, lines 13-54). Le Tallee et al. do not disclose resumption of route. However, Tran discloses after detection of a risk of ground collision, means of determining virtual envelopes of protection determine, in addition to the virtual envelope or envelopes of protection of maneuver a virtual envelope

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of protection of resumption of route, constructed around a fictitious trajectory of resumption of route (see columns 2-3, lines 25-32; column 8, lines 8-54; and columns 10-11, lines 38-27); wherein the means of intrusion detection detect the intrusions of the terrain and/or of the ground obstacles at one and the same time into the virtual envelope or envelopes of protection of maneuver and into the virtual envelope or envelopes of protection of resumption of route (see columns 5-6, lines 48-42; and columns 7-8, lines 23-7). Le Tallee et al. do not disclose ending an avoidance maneuver. However, Kelly et al. disclose the alarm means produce an indication signaling the possibility of ending an avoidance maneuver as soon as the means of intrusion detection no longer note any intrusion of the terrain and/or of the ground obstacles into the virtual envelope or envelopes of protection of resumption of route (see column 4, lines 5-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Le Tallee et al. by combining resumption of route to determine an alternate route to avoid collision, and combining ending an avoidance maneuver for suppressing nuisance alarms unnecessary.

As per claim 2, Le Tallee et al. disclose the fictitious trajectory of resumption of route is a horizontal trajectory (see column 5, lines 52-67).

As per claim 19, Le Tallee et al. do not disclose ending an avoidance maneuver. However, Kelly et al. disclose the indication signaling the possibility of ending an avoidance maneuver is given momentarily in aural and/or visual form (see column 4, lines 5-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Le Tallee et al. by combining ending an avoidance maneuver for suppressing nuisance alarms unnecessary.

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Also, as per claim 20, Kelly et al. disclose produces an indication of holding of the avoidance maneuver in aural and/or visual form, upon the disappearance of a terrain alert and does so, until no risk of collision is detected by the virtual envelope of protection of resumption of route (see columns 3-4, lines 7-15).

4. Claim 3, is rejected under 35 U.S.C.103(a) as being unpatentable over Le Tallee et al. (6438492), Tran (5892462), and Kelly et al. (6567728) as applied to claim 1 above, and further in view of Ishihara (6906641).

As per claim 3, Le Tallee et al., Tran, and Kelly et al. do not disclose aircraft is climbing, holding, or descending. However, Ishihara discloses the fictitious trajectory of resumption of route is a trajectory having as slope a horizontal slope if the instantaneous trajectory of the aircraft is climbing or holding level, and a slope dependent on the instantaneous trajectory of the aircraft if the aircraft is descending (see columns 11-12, lines 8-3; and columns 12-13, lines 36-2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Le Tallee et al., Tran, and Kelly et al. by combining aircraft is climbing, holding, or descending to measure aircraft altitude and current position.

5. Claims 4-8, and 21, are rejected under 35 U.S.C.103(a) as being unpatentable over Le Tallee et al. (6438492), Tran (5892462), and Kelly et al. (6567728) as applied to claim 1 above, and further in view of Bateman et al. (4567483).

As per claim 4, Le Tallee et al., Tran, and Kelly et al. do not disclose a slope dependent on the instantaneous trajectory of the aircraft. However, Bateman et al. disclose the fictitious trajectory of resumption of route is a trajectory having as slope a slope dependent on the instantaneous trajectory of the aircraft (see columns 4-5, lines

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49-44). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Le Tallee et al., Tran, and Kelly et al. by combining a slope dependent on the instantaneous trajectory of the aircraft to determine ground proximity level of the aircraft for warning envelope.

As per claims 5, and 8, Bateman et al. also disclose the fictitious trajectory of resumption of route is a trajectory having as slope a slope dependent on the trajectory of the aircraft at the moment of the detection of the risk of terrain collision, wherein the fictitious trajectory of resumption of route is a trajectory having as heading and slope those of the trajectory of the aircraft at the moment of the detection of the risk of terrain collision (see columns 5-6, lines 44-41).

As per claim 6, Bateman et al. also disclose the fictitious trajectory of resumption of route is a trajectory having as slope a slope dependent on the trajectory of the aircraft at the moment of the detection of the risk of terrain collision, if the latter was descending, and a horizontal trajectory if the latter was flying horizontally or climbing at the moment of the detection of the risk of terrain collision (see columns 18-19, lines 13-10).

As per claim 7, Le Tallee et al., Tran, and Kelly et al. do not disclose the fictitious trajectory of resumption of route is a trajectory having as heading the instantaneous heading of the aircraft. However, Bateman et al. disclose the fictitious trajectory of resumption of route is a trajectory having as heading the instantaneous heading of the aircraft (see columns 3-4, lines 36-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Le Tallee et al., Tran, and Kelly et al. by combining the fictitious trajectory of resumption of route is a trajectory having as heading the instantaneous heading of the aircraft for accurately

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determine aircraft current altitude position to detect warning envelope for ground proximity warning.

As per claim 21, Bateman et al. disclose the vertical distance under the aircraft at which a virtual envelope of protection of resumption of route is placed is taken equal to that used for one of the virtual envelopes of protection of maneuver (see column 8, lines 10-63).

6. Claim 22, is rejected under 35 U.S.C.103(a) as being unpatentable over Le Tallee et al. (6438492), Tran (5892462), Kelly et al. (6567728), and Bateman et al. (4567483) as applied to claim 21 above, and further in view of Snyder et al. (6922703).

As per claim 22, Le Tallee et al., Tran, Kelly et al., and Bateman et al. do not disclose terrain layers. However, Snyder et al. disclose when the terrain anticollision equipment is provided with a display screen showing a representation of the terrain layers and/or of risk with the terrain and/or the obstacles overflown, the vertical distance under the aircraft at which a virtual envelope of protection of resumption of route is placed is taken consistent with that used on the screen for the representation of the terrain layers and/or of risk with the terrain and/or the obstacles overflown (see column 3, lines 9-37; columns 3-4, lines 66-67; and columns 6-7, lines 42-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Le Tallee et al., Tran, Kelly et al., and Bateman et al. by combining terrain layers to provide the ability of the pilot to understand the relationship between the aircraft and the surrounding environment.

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7. Claims 9-18, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

. Lepere et al. (6088654)

. Ishihara et al. (6707394)

. Conner et al. (6826459)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patent Examiner
Dalena Tran



April 12, 2007